Si2316BDS vs. Si2316DS

Description: **N-Channel, 30-V (D-S) MOSFET**
Package: **SOT-23**
Pin Out: **Identical**

Part Number Replacements

Si2316BDS-T1-E3 Replaces Si2316DS-T1-E3
Si2316BDS-T1-E3 Replaces Si2316DS-T1

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C, unless otherwise noted)					
Parameter		**Symbol**	**Si2316BDS**	**Si2316DS**	**Unit**
Drain-Source Voltage		V_{DS}	30	30	V
Gate-Source Voltage		V_{GS}	± 20	± 20	
Continuous Drain Current	T_A = 25 °C	I_D	3.9	3.4	A
	T_A = 70 °C		3.13	2.7	
Pulsed Drain Current		I_{DM}	20	16	
Continuous Source Current (MOSFET Diode Conduction)		I_S	1.04	0.8	
Power Dissipation	T_A = 25 °C	P_D	1.25	0.96	W
	T_A = 70 °C		0.8	0.6	
Operating Junction and Storage Temperature Range		T_j and T_{stg}	- 55 to 150	- 55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}	100	130	°C/W

SPECIFICATIONS (T_J = 25 °C, unless otherwise noted)									
Parameter		**Symbol**	**Si2316BDS**			**Si2316DS**			**Unit**
			Min	**Typ**	**Max**	**Min**	**Typ**	**Max**	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	1.0		3.0	0.8		NS[a]	V
Gate-Body Leakage		I_{GSS}			± 100			± 100	nA
Zero Gate Voltage Drain Current		I_{DSS}			1			0.5	µA
On-State Drain Current	V_{GS} = 10 V	$I_{D(on)}$	20			6			A
	V_{GS} = 4.5 V		NS[a]			4			
Drain-Source On-Resistance	V_{GS} = 10 V	$r_{DS(on)}$		0.041	0.050		0.042	0.050	Ω
	V_{GS} = 4.5 V			0.064	0.080		0.068	0.085	
Forward Transconductance		g_{fs}		6			6.0		S
Diode Forward Voltage		V_{SD}		0.8	1.2		0.8	1.2	V
Dynamic									
Input Capacitance		C_{iss}		350			215		pF
Output Capacitance		C_{oss}		65			90		
Reverse Transfer Capacitance		C_{rss}		37			55		
Total Gate Charge		Q_g		6.35	9.6		4.3	7	nC
Gate-Source Charge		Q_{gs}		1.56			0.65		
Gate-Drain Charge		Q_{gd}		1.1			1.2		
Gate Resistance		R_g		2.6	3.9		NS[a]		Ω

Notes:
a. NS denotes not specified in original datasheet.

Specification comparisons are supplied as a courtesy to compare two devices and do not constitute a commercial product datasheet or any guarantee of identical performance. Designers should refer to the appropriate datasheets of the same number for guaranteed specification limits.